INITIAL REGULATORY FLEXIBILITY ANALYSIS
THREATENED CHINOOK, CHUM, COHO AND SOCKEYE

I. Introduction and Executive Summary

When an agency proposes regulations, the Regulatory Flexibility Act (RFA) (5 U.S.C. § 601-612) requires the agency to prepare and make available for public comment an initial regulatory flexibility analysis (IRFA) that describes the impact of the proposed rule on small businesses, nonprofit enterprises, local governments, and other small entities. The IRFA is to aid the agency in considering all reasonable regulatory alternatives that would minimize the economic impact on affected small entities.

This analysis addresses proposed regulations associated with the following seven salmonid populations- Environmentally Significant Units (ESUs) listed as "threatened" under the provisions of the Endangered Species Act:

Oregon Coast (OC) Coho
Puget Sound (PS) Chinook
Lower Columbia River (LCR) Chinook
Upper Willamette River (UWR) Chinook
Hood Canal Summer-Run (HCS) Chum
Columbia River (CR) Chum
Ozette Lake (OZ) Sockeye

Under section 4(d) of the Endangered Species Act (ESA), the Secretary of Commerce (Secretary) is required to adopt such regulations as he deems necessary and advisable for the conservation of species listed as threatened. For the above seven threatened salmonid ESUs, NMFS proposes to apply the prohibitions enumerated in Section 9(a) of the ESA. These prohibitions would apply to all categories of activities affecting listed salmon in those ESUs, except with respect to specified categories of activities that contribute to conserving listed salmonids or are governed by a program that limits impacts on listed salmonids to an extent that makes additional protection through federal regulation unnecessary.

The number of entities potentially affected by these regulations is substantial and the geographic range of these regulations crosses four states. Activities potentially affecting salmonids are those associated with agriculture, forestry, fishing, mining, heavy construction, highway and street construction, logging, wood and paper mills, water transportation, electric services, and other industries. As many of these activities involve local, state, and Federal oversight, including permitting, governmental activities associated with the smallest towns or planning units to the largest cities will also be impacted. The activities of some nonprofit organizations will also be affected by these regulations.

The geographic scope of the salmonid ESUs, and thus, the scope of proposed regulations can be approximated through the following list of counties:

Washington: Clallam, Clark, Cowlitz, Jefferson, Island, King, Kitsap, Klickitat, Lewis, Mason, Pacific, Pierce, San Juan, Skagit, Skamania, Snohomish, Thurston, Wahkiakum, Whatcom,

Oregon: Benton, Clackamas, Clatsop, Columbia, Coos, Curry, Douglas, Hood River, Lane, Lincoln, Linn, Marion, Multnomah, Polk, Tillamook, Washington, Yamhill

If the proposed rule is not expected to have a significant impact on a substantial number of small entities, the RFA allows an agency to so certify the rule, in lieu of preparing an IRFA. NMFS examined in as much detail as practical the potential impact of the regulation on a sector by sector basis. Unavailable or inadequate data leaves a high degree of uncertainty surrounding both the numbers of entities likely to affected, and the characteristics of any impacts on particular entities. The problem is complicated by differences among entities even in the same sector as to the nature and size of their current operations, contiguity to waterways, individual strategies for dealing with the take prohibitions, etc. Therefore, to ensure a broad consideration of impacts on small entities, NMFS has prepared this IRFA without first making the threshold determination whether this proposed action could be certified as not having a significant economic impact on a substantial number of small entities. Of course, NMFS might determine such certification to be appropriate if established by information received in the public comment period.

There are no record-keeping or reporting requirements associated with the take prohibitions, and therefore it is not possible to simplify or tailor record keeping or reporting to be less burdensome for small entities. However, some programs for which NMFS has found it not necessary to prohibit take involve record keeping and/or reporting to support that continuing determination. NMFS has attempted to minimize any burden associated with programs for which the take prohibitions are not enacted.

In formulating this proposed rule, NMFS considered seven alternative approaches, described in more detail below. NMFS concludes that at the present time there are no legally viable alternative rules that would have less impact on small entities and still fulfill the agency's obligations to protect listed salmonids. The first four alternatives may result in unnecessary impacts on economic activity of small entities, given NMFS' judgment that a more limited application of those protections would suffice to conserve the species.

If you believe the alternative proposed in this rule will impact your economic activity, please comment on whether there is a preferable alternative (including alternatives not described here) that would meet the statutory requirements of ESA section 4(d). Please describe the impact that alternative would have on your economic activity and why the alternative is preferable.

II. Specific Requirement to Prepare an IRFA

The level of detail and sophistication of the analysis should reflect the significance of the impact on small entities. Under 5 U.S.C., Section 603(b) of the RFA, each IRFA is required to address:

1. A description of the reasons why action by the agency is being considered;
2. A succinct statement of the objectives of, and the legal basis for, the proposed rule;
3. A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
4. A description of the projected reporting, record keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
5. An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule;
6. A description of any significant alternatives to the proposed rule that accomplish the stated objectives any other applicable statutes and that would minimize any significant economic impact of the proposed rule on small entities.

III. Reasons For Considering The Proposed Action

Given the threatened biological status of these seven ESUs of threatened salmonids, NMFS finds that the prohibitions for endangered species are generally necessary and advisable for conservation of the species. Therefore NMFS proposes 4(d) rules that would impose the take prohibitions on activities generally, but would not apply those prohibitions to activities found to be adequately protective of the threatened salmonids or otherwise contributing to conservation of the ESUs. The rules do not require any specific actions by non-federal agencies, businesses, organizations, or private individuals. Rather, they will impose on entities the responsibility to review their actions and modify or eliminate those actions that otherwise would lead to "take" of threatened species.

Prohibitions on "take" of individuals apply to a multitude of activities that may injure or kill listed salmon including harvest, hatchery-related actions, or disturbance of habitat. Harm to salmonids can occur through destruction or modification of habitat (whether or not designated as critical) that significantly impairs essential behaviors, including breeding, feeding, rearing, or migration. The take prohibitions apply only to naturally spawned salmonids and their progeny, and specified hatchery populations that have been included in the listings.

Whether take prohibitions or other protective regulations are necessary or advisable is in large part dependent upon the biological status of the species and potential impacts of various activities on the species. The NMFS has concluded that threatened salmonids are at risk of extinction primarily because their populations have been reduced by a variety of human activities. West Coast salmonid populations have been depleted by both the obvious type of take involved in

harvest, as well as take resulting from past and ongoing destruction of their freshwater and estuarine habitats and from past hatchery practices. Therefore it is necessary and advisable in most circumstances to prohibit take of these threatened ESUs, in order to provide for their conservation.

Although state, local and other programs may not be specifically for the conservation of threatened salmonids, many are being modified to provide greater protection to listed salmonids. NMFS concludes that where a program provides sufficient conservation for listed salmonids, it is neither necessary nor advisable to apply take prohibitions to activities governed by those programs. In those circumstances, additional Federal ESA regulation through the take prohibitions is unnecessary because it will not enhance the conservation of the listed ESUs. NMFS also finds that Federal regulation in such circumstances is not the most beneficial use of limited government resources, which are better spent on enforcement where non-federal conservation measures have not been undertaken.

IV. Objectives and Legal Basis of Proposed Rule

The purpose of the ESA is to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species...." Under the ESA, a 'threatened' species is one that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. To conserve a species is to use all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the ESA are no longer necessary. When a species is listed, section 7 of the ESA requires Federal agencies to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat. Section 7 extends protection only against actions that have some nexus to federal agency action, funding, or permitting.

When a species is listed as endangered, section 9 of the ESA makes it illegal for any person subject to the jurisdiction of the United States to "take" any wildlife species listed as endangered. For the purposes of this law, "take" of a species means to harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect (or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. These section 9(a) protections apply by statute only to endangered species, however.

When a species is listed as threatened, section 4(d)[1] of the ESA provides that the Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation of the species, including any or all of the prohibitions applicable to endangered species under Section 9(a). The purpose of this rule is to provide all necessary and advisable protection for threatened salmonid ESUs, by imposing the take prohibitions. As noted above, there are some programs or categories of activities that contribute to conserving listed salmonids or are governed in a manner that limits impacts on listed salmonids to an extent that makes additional protection through federal regulation unnecessary, and for those activities, NMFS is not imposing the take prohibitions.

This 4(d) rule does not require any specific actions by non-federal agencies, businesses, organizations, or private individuals. Rather it is the responsibility of individuals, businesses, agencies, and organizations not to "take" endangered or threatened species, once the take prohibitions are in place. NMFS provides guidance and other support to help state and local agencies develop incentive, regulatory, and enforcement programs that effectively promote restoration of the listed population.

V. Analytical Approach and Information Needs

To aid the reader or commenter in understanding the environmental baseline for considering incremental impacts of the rule, NMFS outlines below questions that bear on an assessment of regulations under the Regulatory Flexibility Act.

1. What are the regulations?
2. What constitutes the universe of entities that need to be in compliance with these regulations?
3. What part of this universe is already in compliance, e.g., activities occurring on federal lands, subject to section 7 consultations, or governed by existing laws and regulations such as the Clean Water Act?
4. Remaining entities are the ones likely to be impacted by the salmonid regulations.
5. What activities are these impacted entities likely to curtail, modify, or undertake to be in compliance with these regulations?
6. How many of these entities are small entities?
7. Are there Federal, state, or local programs that may help mitigate these financial impacts?

The proposed rule is likely to have direct impacts on substantial numbers of entities. However, what is unknown is the ability of these entities to adapt by changing the manner in which they operate or in changing their mix of products. The following examples are provided to indicate how the proposed rule may affect some of the various sectors and to aid public comment. NMFS asks that in commenting on the proposed rule, entities identify any alternative protective regulation that would meet NMFS' statutory responsibilities but have less impact on their

[1] 16 U.S.C. § 1533(d) (1994)

economic activity, describe the impact that alternative would have on your economic activity, and describe why the alternative is preferable.

Agriculture: What would this rule mean for a farm producing common crops in some of these ESUs, such as fruits, vegetables, and nursery stock? Consider a farm growing 15 acres of raspberries yielding 5,200 pounds per acre with prices for raspberries at $0.72 per pound. Reductions in income could result from reduced use of pesticides which could affect both yield per acre and quality of product (price); changes in the quantity of and timing of irrigation water, or reductions in acres that could be cropped. Are there farming techniques or alternative crops that the farmer could employ to mitigate against any loss of revenue and production?

Forestry: Concern in the forest sector surrounds the riparian buffers that may need protection in order to preserve habitat. (Some of this loss occurs as a result of the listing of the salmonids and not as a result of the 4(d) rule because it occurs on Federal land, or as a result of voluntary forest management habitat preservation measures). Reductions of logging between streams could render the entire area between streams infeasible for logging due to the cost of installing yarding systems for log extraction. How many forest landowners face this type of cost? Do they have alternative uses for the land?

Commercial Fishing: For commercial fishing , NMFS does not anticipate any effects on the commercial fishing industry resulting from the 4(d) rule, though certain practices may require modification.

Small Governments: Small governmental jurisdictions are defined as any government of a district with a population of less than 50,000. Districts may include those servicing irrigation, ports, parks and recreation, sanitation, drainage, soil and water conservation, road assessment, etc. These governmental jurisdictions may be affected in many ways including: additional planning required to modify existing programs, increased construction costs in road building and drainage system construction, losses of recreational revenue in the forms of park entry fees and licensing, increased water management costs, increased need for public education, and increased monitoring and enforcement costs. Water management districts are especially susceptible to impacts because flow alterations may be necessary to aid both spawning and smolt migration. How will this propose rule affect the allocations of water and existing plans? Will new programs for conservation and protection have to undertaken?

VI. Effects of the 4(d) Regulation– Prohibitions and Limitations

Take Prohibitions

Individuals or entities conducting activities that could potentially harm, injure, or kill listed salmonids and result in violations of this rule should evaluate the likelihood that their particular activity will do so either directly or through alteration of habitat. They may need to alter the activity, obtain an incidental take permit, or otherwise avoid any unauthorized take of listed fish. Some of the activities NMFS believes could "take" listed fish include, but are not limited to:

1. Land-use activities that adversely affect salmonid habitat (e.g., logging, grazing, farming, or road construction particularly when conducted in riparian areas, or in areas susceptible to mass wasting and surface erosion);
2. Destruction or alteration of salmonid habitat (aside from habitat restoration activities), such as removal of large woody debris and "sinker logs" or riparian shade canopy, dredging, discharge of fill material, draining, ditching, diverting, blocking, or altering stream channels or surface or ground water flow;
3. Discharges or dumping of toxic chemicals or other pollutants (e.g., sewage, oil, gasoline) into waters or riparian areas supporting the listed salmonids;
4. Violation of discharge permits;
5. Pesticide applications in violation of Federal restrictions;
6. Interstate and foreign commerce of listed salmonids and import/export of listed salmonids without an ESA permit, unless the fish were harvested pursuant to this rule;
7. Except as provided in the rule, collecting, or handling listed salmonids;
8. Introduction of non-native species likely to prey on listed salmonids or displace them from their habitat;
9. Water withdrawals in areas where important spawning or rearing habitats may be adversely affected, or otherwise altering streamflow when it is likely to impair spawning, migration, or other essential functions;
10. Constructing or maintaining barriers that eliminate or impede a listed species' access to habitat essential for its survival or recovery;
11. Removing, poisoning, or contaminating plants, fish, wildlife, or other biota required by the listed species for feeding, sheltering, or other essential functions;
12. Releasing non-indigenous or artificially propagated individuals into a listed species' habitat;
13. Constructing or operating inadequate fish screens or fish passage facilities at dams or water diversion structures in a listed species habitat;
14. Constructing or using inadequate bridges, roads, or trails on stream banks or unstable hill slopes adjacent or above a listed species' habitat; or
15. Constructing or using inadequate pipes, tanks, or storage devices containing toxic substances, where the release of such a substance is likely to significantly modify or degrade listed species' habitat.

Limits on the Take Prohibitions

As a matter of law, impacts on listed salmonids due to actions in compliance with a permit issued by NMFS pursuant to section 10 of the ESA are not violations of this rule. Section 10 permits may be issued for research activities, enhancement of the species' survival, or to authorize

incidental take occurring in the course of an otherwise lawful activity. Likewise federally funded or approved activities for which section 7 consultations have been completed, and which are conducted in accord with all reasonable and prudent measures, terms, and conditions provided by NMFS in a biological opinion and accompanying incidental take statement pursuant to section 7 of the ESA will not constitute violations of this rule. NMFS consults on a broad range of activities conducted, funded or authorized by Federal agencies, including fisheries harvest, hatchery operations, silviculture, grazing, mining, road construction, dam construction and operation, discharge of fill material, stream channelization or diversion.

NMFS has determined that it is neither necessary nor advisable to impose section 9 take prohibitions on certain programs or activities carried out or authorized by state or other governments in the threatened salmonid ESUs, where those activities contribute to conservation of the ESU or are regulated by other entities in a way that is adequately protective of salmonids.

1. Fishery Management Limits on the Take Prohibitions

NMFS believes that fisheries for non-listed salmonids can have an acceptably limited effect on listed salmonids, as long as state fishery management programs are specifically tailored to protect listed salmonids. Through the proposed rule, NMFS proposes not to impose take prohibitions where states have adequate programs. To qualify for this limit on the take prohibitions a state must have developed a Fishery Management and Evaluation Plan (FMEP) for their respective salmonid and resident species fisheries that adequately limits take of listed salmonids and have entered into a Memorandum of Agreement (MOA) with NMFS to ensure adequate implementation of the FMEP.

NMFS also concludes that carefully designed artificial propagation programs may be consistent with and support protection and conservation of listed salmonids. If a state or federal agency develops a Hatchery and Genetic Management Plan containing specific management measures that adequately limits take of listed salmonids and promote the conservation of the listed ESU, NMFS finds that additional Federal protections through imposition of take prohibitions would be unnecessary for conservation of the listed salmonids.

2. Scientific Research Limits on the Take Prohibitions

In carrying out their fishery management responsibilities in Washington and Oregon, state fishery management agencies conduct or permit a wide range of scientific research activities on various fisheries, including studies on salmonids occur in the seven listed ESUs. NMFS finds these activities are vital for improving an understanding of the status and risks facing salmonids and other species in these ESUs, and will provide critical information for assessing effectiveness of current and future management practices. Therefore the take prohibitions are not imposed on these activities so long as conducted with approval of the respective state in accord with limitations and reporting requirements of the rule.

3. Habitat Restoration Limits on the Take Prohibitions

Certain habitat restoration activities are likely to contribute to conserving salmonids, and NMFS therefore does not propose to impose take prohibitions on such activities so long as they are conducted in accordance with appropriate standards and guidelines. Projects planned and carried out based on at least a watershed-scale analysis and conservation plan, and, where practicable, a sub-basin or basin-scale analysis and plan, are likely to be the most beneficial. The rule therefore provides that Section 9(a) take prohibitions will not apply to habitat restoration activities found to be part of, and conducted pursuant to a watershed conservation plan. A state must approve or disapprove watershed conservation plans depending on whether they are formulated in accordance with NMFS-approved state watershed conservation plan guidelines.

This rule also proposes that until approved watershed plans are in place, take prohibitions would not be applied to several habitat restoration activities if carried out in accord with applicable state guidance, and of course with any required reviews or permits. The activities excepted under carefully defined conditions are:

a. Riparian zone planting or fencing
b. Livestock water development off-channel
c. Large wood or boulder placement
d. Correcting road/stream crossings, including culverts, to allow or improve fish passage.
e. Repair, maintenance, or decommissioning of roads in danger of failure.
f. Salmonid carcass placement.

More complex restoration activities such as habitat construction projects or channel alterations require project by project technical review at least until watershed planning is complete. The purpose of this limit on application of the take prohibitions is to enable beneficial habitat restoration activities to continue in the short term until states formulate more comprehensive watershed conservation plan guidelines and plans. After a watershed conservation plan has been approved, only activities conducted pursuant to the plan will be within the limit on take prohibitions. If no plan has been approved for a watershed within two years following the effective date of this interim rule, the general Section 9(a) take prohibitions of this interim Section 4(d) rule apply to individual restoration activities just as to all other habitat-affecting activities.

4. Limit on the Take Prohibitions for Properly Screened Water Diversions

A widely recognized cause of mortality among anadromous fish is operation of water diversions without adequate screening. Juveniles may be sucked or attracted into diversion ditches where they later die from a variety of causes, including stranding. Adult and juvenile migration may be impaired by diversion structures, including push-up dams. Juveniles are often injured and killed through entrainment in pumping facilities or impingement on inadequate screens, where water pressure and mechanical forces are often lethal. Despite long-time recognition of these problems and a multitude of state and Federal approaches to reducing these impacts, large numbers of diversions are not adequately screened and remain a threat, particularly to juvenile salmonids. This rule proposes to recognize those diverters who have provided adequate screening, and encourage others to take that step, by not applying the take prohibitions for those diversions that

are properly screened in accord with NMFS' fish screening criteria. The proposed limit on the take prohibitions applies only to physical impacts on listed fish due to entrainment or similar impacts of the act of diverting. It does not include take that may be caused by instream flow reductions associated with operation of the water diversion facility, nor impacts associated with installation of the stream (dewatering, etc.).

5. Routine Road Maintenance Limit on the Take Prohibitions

The Oregon Department of Transportation (ODOT) is responsible for the extensive existing transportation infrastructure represented by Oregon's state highway system. ODOT maintenance and environmental staff have developed a program that greatly improves protections for listed salmonids with respect to the range of routine maintenance activities, minimizing their impacts on receiving streams. ODOT's program includes its Maintenance of Water Quality and Habitat Guide dated June, 1999 (Guide) and a number of supporting policies and practices. NMFS does not find in necessary or advisable to apply take prohibitions to routine road maintenance work performed consistent with the Guide, because in NMFS' judgement doing so would not increase the level of protection provided for listed salmonids. Activities other than routine maintenance, including new construction, major replacements, or activity for which a Corps of Engineers permit is required, will remain subject to the take prohibitions. Likewise, take prohibitions do apply to any pesticide applications or dust abatement applications associated with road maintenance. Any Oregon city or county desiring that take prohibitions not apply to its routine road maintenance activities must not only commit in writing to apply the measures in the Guide, but also must first enter a memorandum of agreement with NMFS detailing how it will assure adequate training, tracking, and reporting.

6. Portland Parks Integrated Pest Management Limit on the Take Prohibitions

The City of Portland, Oregon, Parks and Recreation (PP&R) operates a diverse system of city parks representing a full spectrum from intensively managed recreation, sport, golf, or garden sites to largely natural, unmanaged parks, including the an extensive, wooded Forest Park. PP&R has been operating and refining an integrated pest management program for 10 years, with a goal of reducing the extent of its use of herbicides and pesticides in park maintenance. As a result of this program, the City has phased out regularly scheduled treatments such as turf spraying to control broadleaf weeds. This has reduced total use of chemical to control broadleaf weeds to less than 15% of its former level. The program's "decision tree" place first priority on prevention of pest (weeds, insects, disease) through policy, planning, and avoidance measures (design and plant selection). Second priority is on cultural and mechanical practices, trapping, and biological controls. Use of biological products, and finally of chemical products, is to be considered last. PP&R's overall program affects only a small proportion of the land base and waterways within Portland, and serves to minimize any impacts on listed salmonids from chemical applications associated with that specific, limited land base.

The PP&R has recently developed special policies to provide extra protections near waterways and wetlands, including a 25 foot buffer zone in which pesticide use is limited to specified products, applied with a hand wand from a backpack sprayer, which utilizes low pressure spray

to minimize drift NMFS concludes that PP&R's program provides adequate protection for listed salmonids with respect to the limited chemical use the program entails. NMFS does not find in necessary or advisable to apply additional Federal protections in the form of take prohibitions to PP&R activities conducted under PP&R's integrated pest management program, because doing so would not increase the level of protection provided for listed salmonids. NMFS therefore does not propose to apply the take prohibitions of this rule to activities within the PP&R program.

7. Limit on the Take Prohibitions for New Urban Density Development

As a general matter, significant new urban scale developments have the potential to degrade salmonid habitat and to injure or kill salmonids through a variety of impacts. Through this proposed rule, NMFS proposes a mechanism whereby jurisdictions can be assured that development authorized within those areas is consistent with ESA requirements and avoids or minimizes the risk of take of listed salmonids.

This rule proposes that NMFS will not apply take prohibitions to new developments governed by and conducted in accord with adequate city ordinances that help conserve anadromous salmonids. Similarly, take prohibitions will not be applied to development consistent with an Urban Reserve Plan that Portland's metropolitan regional government, Metro, has evaluated and approved as in compliance with adequate guidelines. In evaluating adequacy of Metro guidelines or local ordinances NMFS will focus on twelve issues:

a. Siting that avoids sensitive or constrained sites.
b. Avoiding stormwater discharge impacts to water quality and quantity, and to the historic hydrograph characteristics of the watershed.
c. Protection of adequate vegetated riparian buffers along all streams.
d. Avoiding stream crossings by roads wherever possible, and minimizing their impacts.
e. Protecting historic stream meander patterns, flood plains and channel migration zones.
f. Protecting wetlands and surrounding vegetation to maintain wetland functions.
g. Preserving the hydrologic capacity of streams to pass peak flows.
h. Landscaping to reduce need for watering and chemical application.
i. Preventing erosion and sediment run-off during and after construction.
j. Assuring that water supply demands do not impact flows needed for salmonids.
k. Monitoring and maintaining detention basins and similar tools.
l. Providing needed enforcement, funding, monitoring, reporting, and implementation mechanisms.

8. Limit on the Take Prohibitions for Forest Management in Washington

In the State of Washington, discussions among timber industry, tribes, state and federal agencies, and interest groups have led to an April 29, 1999 Forests and Fish Report (FFR) to Governor Locke which provides important improvements in forest practice regulation. It also mandates that all existing forest roads be inventoried for potential impacts on salmonids through culvert inadequacies, erosion, slope failures, and the like, and all needed improvements be completed within 15 years. Because of the substantial detrimental impacts of inadequately sited,

constructed or maintained forest roads on salmonid habitat, this feature of the overall FFR provides a significant conservation benefit for listed ESUs in Washington.

Because of the above features NMFS does not propose to apply section 9 take prohibitions to non-federal forest management activity conducted in the State of Washington in compliance with the FFR and forest practice regulations implemented by the Washington Forest Practices Board that are at least as protective of habitat functions as are the regulatory elements of the FFR. These measures will provide a significant level of protection to listed salmonids and contribute to their conservation. Activity associated with pesticide use or undertaken pursuant to alternate plans is not within this limitation and would remain subject to take prohibitions.

Elements of the FFR that provide protections or conservation benefits for salmonids include:

a. Adequate classification of water bodies and broad availability of that information.
b. Maintenance and upgrade of existing as well as new forest roads.
c. Protection for unstable slopes from increased failure and sedimentation to streams.
d. Measures to achieve properly functioning riparian conditions.
e. Adequate monitoring and adaptive management programs.

VII. Number and Description of Affected Small Entities

Based on the expected effects of the 4(d) rule, the following series of subsections enumerate, to the extent practicable, the number and nature of the "small entities" which comprise the commercial sectors, not-for-profit organizations, and governmental jurisdictions and communities that are likely to be affected by this proposed rule. Taken as a whole, these "entities" define the potentially impacted universe for purposes of the IRFA.

The Small Business Administration (SBA), under the Small Business Size Standards, defines whether a business entity is eligible for government programs and preferences reserved for "small business" concerns. Size standards have been established for types of economic activity or industry generally within the Standard Industrial Classification (SIC) System. Rough guidelines are that a small company employs fewer than 500 people and has less than $5,000,000 in annual sales. For purposes of this analysis, since sales information by firm size is not available, small business will be defined to be ones that employ fewer than 500 people. (SBA has undertaken a national analysis of firms that indicates that typically for a given industry or SIC category, ninety percent of firms employ less than 20 people.) Small government entities are defined as those serving populations of 50,000 or less. In some instances this may be an entire county government, or all political subdivisions and public districts within such counties. Most tribal governments will also meet this standard. Identification of "small organizations" is defined as "any nonprofit enterprise that is independently owned and operated and not dominant in its field." These may include irrigation districts, public utilities, agricultural co-ops, etc.

<u>Sectors</u>

1. Agriculture: Agriculture includes both crop and livestock farming and ranching. Some soil disturbing activities are involved in all types of agriculture. Chemicals (fertilizers and pesticides) are used on cultivated crops and pastures. Some cropland and pasture is irrigated. Use of riparian areas for livestock grazing and some crop production also occurs. Some livestock activities result in concentrated accumulation of animal wastes. All of these activities could potentially be modified or curtailed by farmers and ranchers to avoid "taking" of salmonids. Tillage practices may be modified to minimize soil-disturbing activities. Use of chemicals, such as fertilizers and pesticides, could be modified. Irrigated acreage could be reduced in response to instream flow needs designed to protect habitat. Use of riparian areas for livestock grazing and some crop production could be curtailed. Management of animal wastes could be modified. Management of noxious plants may become more costly. All of these activities could potentially be modified or curtailed in response to the rule, affecting both the costs of production and yield rates, resulting in a change in net farm income. It is likely that some modification or curtailment in agricultural activities will occur as a result of application of take prohibitions.

2. Forestry: Forest management activities typically include site preparation, planting, release, pre-commercial thinning, fertilizing, commercial thinning, and final harvest, with this cycle repeated for each rotation. Within this cycle, there are a number of activities where the common methods used may have to be modified in response to the rule. Several of the activities may involve either construction or re-construction of roads. It is also possible that some harvest methods may have to be modified to lessen the potential amount of soil disturbance. Use of chemicals may also be curtailed, resulting in release activities being modified to use more hand methods instead of chemical methods, and there may be limits on fertilization. In addition to modification of these activities, there may be limits on the land areas where they may be practiced, such as buffer areas around streams. It is likely that some modification or curtailment in forestry activities will occur as a result of the imposition of take prohibitions. Indirect effects from forest products manufacturing activities may result from those changes.

3. Fishing: Washington and Oregon are developing Fishery Management and Evaluation Plans that are expected to adequately limit incidental take of listed salmon. Thus, in those states the take prohibitions will likely not apply to ongoing fisheries for non-listed salmon and resident species. Of course, fisheries in the Columbia River and Pacific Ocean are governed by Federal plans subject to ESA § 7 consultation.

4. Mining: The most common form of mining potentially affected by the 4(d) rule is sand and gravel. Removal of material from streams may occur in the usual course of this activity, and mining gravel may also result in the production of sediment. Some metal mining also occurs in the various ESUs. Mine wastes may produce both sediments and chemicals. Placer mining and "mini-dredges" present the possibility of streambed disturbance. All of these activities could potentially be modified or curtailed to avoid any substantial risk of "taking" listed salmonids.

5. Construction: Residential development, commercial development, and highway construction may all involve soil-disturbing activities that can produce sediment in runoff. Where salmonid

habitat interacts with growth centers, construction activities could potentially be modified or curtailed in response to the prohibitions on take.

Identification of Small Businesses within Threatened Salmonid ESU Impact Areas

The Small Business Administration (SBA), under the Small Business Size Standards, defines whether a business entity is eligible for government programs and preferences reserved for "small business" concerns. Size standards have been established for types of economic activity or industry generally within the Standard Industrial Classification (SIC) System. The SIC system assigns four-digit SIC codes to all economic activity within ten major divisions. A full table matching a size standard with each four-digit SIC code is published annually by SBA in the Federal Register. Table 1 shows the SIC codes and the sectors used in this analysis to determine the number of small establishments.

Table 1
Small Establishments Sectors

SIC	Sector Description
0700	Agricultural Services
0800	Forestry
0900	Fishing
1000	Metal Mining
1400	Non Metallic Mining
1440	Sand & Gravel
1600	Heavy Construction
1610	Highway & Street Construction
2091	Canned & Cured Seafood
2092	Fresh & Frozen Fish
2410	Logging
2420	Sawmills & Planing Mills
2436	Softwood Plywood & Veneer
2610	Pulp Mills
4449	Water Transportation, Freight NEC
4910	Electric Services

Identification and Description of Small Governments within ESU Impact Area

Small government entities are defined as those serving populations of 50,000 or less. In some instances this may be an entire county government, or all political subdivisions and public districts within such counties. Districts may include those servicing irrigation, ports, parks and recreation, sanitation, drainage, soil and water conservation, road assessment, etc. These governmental jurisdictions may be affected in many ways including: additional planning required to modify existing programs, increased construction costs in road building and drainage system construction, losses of recreational revenue in the forms of park entry fees and licensing, increased water management costs, increased need for public education, and increased monitoring and enforcement costs. Water management districts are especially susceptible to impacts because flow alterations may be necessary to aid both spawning and smolt migration. This may result in reallocations of water, redesigning existing plans, and developing new programs for conservation and protective measures. These small entities are a likely form of small entity to experience significant impacts. Most tribal governments will also meet this standard. When counties have populations greater than 50,000, those municipalities of fewer than 50,000 can be identified using population reports. Other types of small government entities are not as easily identified under this standard, as they are not typically classified by population.

1. Columbia River (CR) Chum ESU: Included in this ESU are seven county governments and all of the city governments in these counties, as well as suburban cities within the larger counties, and several types of district governments.
2. Hood Canal Summer (HCS) Chum ESU: Included in this ESU are two county governments and all of the city governments in these counties, as well as suburban cities within the larger counties, and several types of district governments.
3. Lower Columbia River (LCR) Chinook ESU: Included in this ESU are five county governments and all of the city governments in these counties, as well as suburban cities within the larger counties and several types of district governments.
4. Oregon Coast (OC) Coho ESU: Included in this ESU are five county governments and all of the city governments in these counties, as well as suburban cities within the larger counties, and several types of district governments. Five Indian tribes are also located within the ESU.
5. Ozette Lake (OZ) Sockeye ESU: While Clallam County has a population in excess of 50,000, all of the city governments within the county serve populations of less than 50,000, and there are several types of district governments. The Ozette Indian Reservation is also located within the ESU.
6. Puget Sound (PS) Chinook ESU: Included in this ESU are three county governments and all of the city governments in these counties, as well as suburban cities within the larger counties and several types of district governments.
7. Upper Willamette River (UWR) Chinook ESU: There are five cities in the ESU with populations of 50,000 or more. All other cities are categorized as small entities. Also, the Grand Ronde Indian Reservation is in the ESU impact area..

<u>Identification of Small Organizations within ESU Impact Area</u>

Small organizations are more difficult to categorize. No quantifiable standard, such as number of employees, business receipts, or population is generally available. Identification of “small

organizations" is defined as "any nonprofit enterprise that is independently owned and operated and not dominant in its field." These may include irrigation districts, public utilities, agricultural co-ops, etc. Further, depending upon state laws, it may be difficult to distinguish whether a small entity is a government or nonprofit entity. For example, a water supply entity may be a cooperative owned by its members in one case and in another a publicly chartered small government with the assets owned publicly and officers elected at the same elections as other public officials. NMFS encourages comment from any small organization that believes the rule may impact its activities.

Geographic Boundaries for Economic Unit Corresponding to ESU

Counties included in this analysis area were identified using data provided by NMFS on county land area included in the ESU and maps provided by NMFS identifying the boundary of the ESU. If any portion of a county was inside the ESU boundary, the entire county was included in the economic impact area. This approach was used because business activities are not restricted by geographic boundaries. Businesses such as those within the agricultural service sector may work within the ESU, and therefore be affected by the 4(d) rule, though they are physically located outside the ESU. Also, changes in water use for an entity within the ESU could impact small entities outside the ESU through changes in availability of water. In practice, the majority of water use planning and management programs are in place already (see VIII. Baseline of Existing Protective Measures), and these have some level of provisions to protect threatened or endangered fish. Counties not inside the ESU boundary, but adjacent to counties within the ESU, were evaluated to determine if there could be possible spillover effects on small entities within those counties.

1. Columbia River (CR) Chum ESU: This ESU includes all naturally spawned chum salmon in the Columbia River downstream from Bonneville Dam, excluding Oregon tributaries upstream of Milton Creek at river km 144 near the town of St. Helens. The following counties are included in the Columbia River ESU impact area: Clackamas, Clatsop, Columbia, Multnomah, and Hood River, Oregon; Clark, Cowlitz, Skamania, Klickitat, Lewis, Wahkiakum, and Pacific, Washington. For the Columbia River ESU, 9 percent of the land is Federally-owned. Because Federal land management agencies must comply with species protection measures as a result of a species being listed as threatened or endangered, this land will not be affected by the 4(d) rule. However, 80 percent of the land in this ESU is privately owned, and the remainder is state, local or tribal. Hence the majority of this land will be affected by the 4(d) rule.

2. Hood Canal Summer (HCS) Chum ESU: This ESU includes all naturally spawned chum salmon in the Hood Canal drainage as well as Olympic Peninsula rivers between Hood Canal and Sequim Bay, Washington. Also included is the Hood Canal waterway, from its southern terminus at the Union River, north to its confluence with Admiralty Inlet near Port Ludlow, Washington. The following counties are included in the Hood Canal ESU impact area: Clallam, Jefferson, Kitsap, and Mason, Washington. For the Hood Canal ESU, 48 percent of the land is Federally-owned. Because Federal land management agencies must comply with species protection measures as a result of a species being listed as threatened or endangered, this land

will not be affected by the 4(d) rule. However, 39 percent of the land in this ESU is privately owned, and the remainder is state, local or tribal. Hence approximately half of the land area in this ESU will be affected by the 4(d) rule.

3. Lower Columbia River (LCR) Chinook ESU: This ESU includes all naturally spawned chinook populations residing below impassable natural barriers (e.g., long-standing, natural waterfalls) from the mouth of the Columbia River to the crest of the Cascade Range just east of the Hood River in Oregon and the White Salmon River in Washington. NMFS concludes that none of the hatchery chinook salmon stocks identified as part of this ESU should be listed since none are currently essential for the recovery of the ESU. The following counties are included in the Lower Columbia River ESU impact area: Clackamas, Clatsop, Columbia, Multnomah, and Hood River, Oregon; Clark, Cowlitz, Skamania, Lewis, Wahkiakum, and Pacific, Washington. For the Lower Columbia River ESU, 36 percent of the land is Federally-owned. Because Federal land management agencies must comply with species protection measures as a result of a species being listed as threatened or endangered, this land will not be affected by the 4(d) rule. However, 56 percent of the land in this ESU is privately owned, and the remainder is state, local or tribal. Hence the majority of this land will be affected by the 4(d) rule.

4. Upper Willamette River (UWR) Chinook ESU: Chinook habitat in the Upper Willamette River ESU is designated to include all river reaches accessible to chinook salmon in the Willamette River and its tributaries above Willamette Falls. This ESU includes naturally spawned spring-run populations above Willamette Falls. Major rivers known to support chinook salmon within the upper Willamette River ESU include the Mollala River, North Santiam River, and McKenzie River. Fall chinook salmon above the Willamette Falls are introduced and although they are naturally spawning, they are not considered a population for purposes of defining this ESU. NMFS concludes that none of the hatchery chinook salmon stocks identified as part of this ESU should be listed since none are currently essential for the recovery of the ESU. The following counties are included in the Upper Willamette River Chinook Salmon ESU impact area: Washington, Clackamas, Marion, Linn, Benton, Polk, Yamhill, and Lane, Oregon. For the Upper Willamette River ESU, 23 percent of the land is Federally-owned. Because Federal land management agencies must comply with species protection measures as a result of a species being listed as threatened or endangered, this land will not be affected by the 4(d) rule. However, 75 percent of the land in this ESU is privately owned, and the remainder is state, local or tribal. Hence the majority of this land will be affected by the 4(d) rule.

5. Oregon Coast (OC) Coho ESU: Coho included in the Oregon Coast ESU are all naturally spawned populations of coho salmon in Oregon coastal streams south of the Columbia River and north of Cape Blanco. Excluded are areas above specific dams or above longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years). The following counties are included in the Oregon Coast ESU impact area: Clatsop, Tillamook, Columbia, Yamhill, Lincoln, Polk, Benton, Lane, Douglas, Coos, and Curry, Oregon. For the Oregon Coast ESU, 35 percent of the land is Federally-owned. Because Federal land management agencies must comply with species protection measures as a result of a species

being listed as threatened or endangered, this land will not be affected by the 4(d) rule. However, 56 percent of the land in this ESU is privately owned, and the remainder is state, local or tribal. Hence the majority of this land will be affected by the 4(d) rule.

6. Ozette Lake (OZ) Sockeye ESU: This ESU includes all naturally spawned sockeye residing below impassable natural barriers (e.g., long-standing, natural waterfalls) in the Ozette Lake Basin. The following county is included in the Ozette Lake ESU impact area: Clallam, Washington. For the Ozette Lake ESU, 15 percent of the land is Federally-owned. Because Federal land management agencies must comply with species protection measures as a result of a species being listed as threatened or endangered, this land will not be affected by the 4(d) rule. However, 75 percent of the land in this ESU is privately owned, and the remainder is state, local or tribal. Hence the majority of this land will be affected by the 4(d) rule.

7. Puget Sound (PS) Chinook ESU: This ESU includes all naturally spawned chinook populations residing below impassable natural barriers (e.g., long-standing, natural waterfalls) in the Puget Sound region from the North Fork Nooksack River to the Elwha River on the Olympic Peninsula, inclusive. The following counties are included in the Puget Sound ESU impact area: Whatcom, Skagit, Snohomish, King, Pierce, Thurston, Mason, Jefferson, Clallam, Kitsap, Island, and San Juan, Washington. For the Puget Sound ESU, 36 percent of the land is Federally-owned. Because Federal land management agencies must comply with species protection measures as a result of a species being listed as threatened or endangered, this land will not be affected by the 4(d) rule. However, 53 percent of the land in this ESU is privately owned, and the remainder is state, local or tribal. Hence the majority of this land will be affected by the 4(d) rule.

Universe--Numbers of Small Businesses

County Business Patterns (CBP) data, published by the U.S. Department of Commerce, are used at the county level to determine the number of firms in each affected sector in each county that meet the SBA small business classification standard. The results of the identification of small entities in counties associated with the various ESUs are presented in Tables 2 and 3. These tables establish an upper limit on the number of small businesses potentially affected by the 4(d) rule. Some of these establishments are a part of a larger entity that does not fit the criteria for a small business. Furthermore, as illustrated by the list of questions in Section V that establish the baseline for which impacts are to be measured., not all of these establishments will be impacted by these salmonid regulations given the presence of other regulations and the limits on take prohibitions set out in the rule.

For the sectors examined, almost all establishments had between 1 and 499 employees. The few exceptions were the following. On a ESU basis, Electric Services categories contained large establishments in CR (2 large); LCR (2), OZ (1), and PS (1). Large establishments were also contained in Softwood, Plywood, and Veneer-OC (3); Heavy Construction-OZ (4) and PS (4), and Sawmills and Planing Mills-UW (1). The Census of Agriculture was used to identify the number of farms with sales of less than $500,000. Except for the LCR (88 percent) and the PS

(95 percent) ESUs, the percentage of farms that had sales below the SBA threshold of less than $500,000 in sales was typically 97 percent or higher (see Table 3).

Table 2-Number of Establishments by ESU

Type of Establishment	CR	HCS	LCR	OC	OZ	PS	UW
Agricultural Services	685	169	680	386	31	1,948	859
Forestry	103	31	100	163	10	105	171
Fishing	50	38	50	75	9	377	10
Metal Mining	1	0	1	3	0	6	6
Non-Metallic Mining	42	16	40	46	6	75	61
Sand & Gravel Mining	20	8	18	19	4	36	28
Heavy Construction	311	63	304	172	22	639	283
Highway & Street Construction	103	15	99	82	5	140	101
Logging	460	126	410	689	77	423	464
Sawmills & Planing Mills	92	39	92	107	26	150	98
Softwood Plywood & Veneer	10	2	9	28	1	10	22
Electric Services	39	12	37	36	1	73	29

Table 3-Number of Farms by ESU

ESU	Less than $500,000	$500,000 or More
Columbia River Chum ESU	8,653	176
Hood Canal Summer Chum ESU	949	6
LColumbia River Chum ESU	8,157	164
Oregon Coast Coho ESU	9,387	195
Ozette Lake Sockeye ESU	325	3
PS ESU	7,490	365
UW ESU	14,124	445

VIII. Baseline of Existing Protective Measures

This analysis addresses the incremental economic impacts of the rule on small entities, over and above the baseline conditions established by listing actions and those activities adequately regulated by state and tribal governments which aid in the conservation of the species.

Existing regulations and programs are reviewed below, in an effort to isolate the incremental actions small entities may need to take to avoid "taking" listed salmon beyond behavior already required by previous listings of endangered species, by various Federal laws such as the Clean Water Act, various state conservation measures, and any other existing fish and wildlife legislation.

Federal Protection Measures

1. Previous Listings

a. Columbia River Chum ESU: Previously, the steelhead has been listed as threatened in the Lower Columbia River ESU.[2] The steelhead ESU significantly overlaps with the Columbia River ESU for chum. Also, on March 24, 1999, NMFS listed the chinook salmon as threatened in the Lower Columbia River ESU.[3] This ESU also significantly overlaps with the Columbia River Basin ESU for chum. Consequently, it is assumed that many actions that benefit chum conservation have already been taken as a result of the previous steelhead listing and will simultaneously be undertaken for purposes of chinook salmon conservation.

b. Hood Canal Summer Chum ESU: One day prior to the final rule listing chum salmon as threatened in the Hood Canal ESU, the chinook salmon was listed as threatened in the Puget Sound ESU.[4] The chinook ESU covers all of the area included within the Hood Canal ESU for summer-run chum. Consequently, it is assumed that many actions that benefit chum conservation will also be taken for the purpose of chinook salmon conservation .

c. Lower Columbia River Chinook ESU: Previously, steelhead have been listed as threatened in the Lower Columbia River ESU.[5] The steelhead ESU significantly overlaps with the Lower Columbia River Basin ESU for chinook. Consequently, it is assumed that many actions that benefit chinook conservation have already been taken as a result of the previous steelhead listing.

d. Oregon Coast Coho ESU: There are no previously listed anadromous fish in the Oregon Coast ESU. However, steelhead is a candidate species for listing in this ESU.

e. Ozette Lake Sockeye ESU: Sixteen days prior to the announcement listing the Ozette Lake sockeye as threatened, NMFS listed the chinook salmon as threatened in the Puget Sound ESU.[6] The chinook ESU is much larger and completely encloses the Ozette Lake ESU for

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[2] 63 FR 13347.

[3] 64 FR 14308.

[4] 64 FR 14308.

[5] 63 FR 13347

[6] 64 FR 14308.

sockeye. Consequently, it is assumed that many actions that benefit sockeye conservation in this ESU will also need to be taken as a result of the previous chinook listing.

f. Puget Sound Chinook ESU: No anadromous fish has been previously listed in the Puget Sound chinook ESU.

g. Upper Willamette River Chinook ESU: Previously, the steelhead has been listed as threatened in the Upper Willamette River ESU.[7] The steelhead ESU significantly overlaps with the Upper Willamette River Basin ESU for chinook. Consequently, it is assumed that many actions that benefit chinook conservation will also be undertaken for the purpose of preserving other listed species..

2. Section 7 Consultation

Actions with Federal involvement (i.e., authorized, funded, or conducted by a Federal agency) fall under Section 7 of the ESA. Section 7 is a very powerful mechanism to avoid activities that jeopardize listed species or affect critical habitat. Under Section 7, Federal agencies must ensure that their actions are not likely to jeopardize the continued existence of the listed species. Activities that jeopardize a species are defined as those actions that "reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery" of the species (See 50 C.F.R. 402.02). Examples of Federal activities that may affect the conservation of salmonids include dam and hatchery operations, marine fishery regulations, Federal land management activities, and Federal licensing and permitting for such actions as forestry and logging, mining, road construction, dam construction, discharge of fill material, stream channelization, and stream diversion. These activities are not affected by the 4(d) prohibitions, as long as Section 7 consultation has been completed and such activities are conducted in accordance with any terms and conditions specified by NMFS. Consultations are required automatically after a species is listed. As a result, this economic analysis addresses only the incremental impacts of the proposed 4(d) rule, and excludes the effects on small businesses which may occur at present or in the future as a result of Federal agency policy changes resulting from Section 7 consultations.

3. Northwest Forest Plan

The Northwest Forest Plan (NFP) is a Federal management policy with important benefits for salmonids. While the NFP covers a very large area, the overall effectiveness of the NFP in conserving salmonids is limited by the extent of Federal lands and the fact that Federal land ownership is not uniformly distributed in watersheds within the affected ESUs. The extent and distribution of Federal lands limits the NFP's ability to achieve its aquatic habitat restoration objectives at watershed and river basin scales and highlights the importance of complementary salmon habitat conservation measures on non-federal lands within the subject ESUs.[8]

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[7] 64 FR 13408.

[8] National Marine Fisheries Service, Steelhead Conservation Efforts, A Supplement to the Notice of Determination for West Coast Steelhead Under the Endangered Species Act, August, 1996.

4. PACFISH

On February 25, 1995, the U.S. Forest Service and Bureau of Land Management adopted Implementation of Interim Strategies for Managing Anadromous Fish-Producing Watersheds in eastern Oregon and Washington, Idaho, and portions of California (known as PACFISH). The strategy was developed in response to significant declines in naturally reproducing salmonid stocks, and widespread degradation of anadromous fish habitat throughout public lands in Idaho, Washington, Oregon, and California, outside the range of the northern spotted owl. Like the NFP, PACFISH is an attempt to provide a consistent approach for maintaining and restoring aquatic and riparian habitat conditions which, in turn, are expected to promote the sustained natural production of anadromous fish. However, as with the NFP, PACFISH is limited by the extent of Federal lands and the fact that Federal land ownership is not uniformly distributed in watersheds within the affected ESUs. Furthermore, PACFISH was designed to be a short-term land management/anadromous fish conservation strategy to halt habitat degradation and begin the restoration processes until a long-term strategy could be adopted through the Interior Columbia River Basin Ecosystem Management Project While final work on ICBEMP has been delayed, NMFS has consulted with both USFS and BLM on current forest management activities, in order to assure that they will no jeopardize listed salmonids.

5. Habitat Conservation Plans (HCPs)

NMFS and FWS are also engaged in an ongoing effort to assist in the development of multiple species Habitat Conservation Plans (HCPs) for state and privately owned lands in Oregon and Washington. While Section 7 of the ESA addresses species protection associated with Federal actions and lands, Habitat Conservation Planning under Section 10 of the ESA addresses species protection on private (non-federal) lands. HCPs are particularly important since significant percentages of the habitat in the range of these seven ESUs is in non-federal ownership. The intent of the HCP process is to ensure that any incidental taking of listed species will not appreciably reduce the likelihood of survival of the species, reduce conflicts between listed species and economic development activities, and to provide a framework that would encourage "creative partnerships" between the public and private sectors and state, municipal, and Federal agencies in the interests of endangered and threatened species and habitat conservation.

6. Clean Water Act (CWA)

The Federal Water Pollution Control Act (FWPCA) was originally enacted in 1972 and amended with major provisions by legislation in 1977, 1981, and 1987. It is commonly referred to as the Clean Water Act, the title of the 1977 amendments. The principle objective of the Act is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The FWPCA also establishes a national policy on technology-based effluent standards and limitations and discharge water quality standards. The Environmental Protection Agency (EPA) has been given principle responsibility for administering the FWPCA.

All entities are presently regulated as to the amount of a pollutant that a point source can discharge into the water. The FWPCA requires that all discharges comply with minimum effluent limitations or standards. These requirements presently affect all of the entities considered in this

analysis. In January 1998, President Clinton announced a major new clean water initiative designed to speed the restoration of water quality within the nation's watersheds. This new initiative (to be administered by the EPA) will increase the Federal government's support to states in carrying out a watershed approach to clean water. Included within this new initiative will be more stringent requirements regarding water runoff from Federal lands and incentives for private landowners, including providing technical assistance in reducing polluted runoff from agricultural, range, and forest lands.

The Federal CWA is intended to protect beneficial uses, including fishery resources. To date, implementation has not been effective in adequately protecting fishery resources, particularly with respect to non-point sources of pollution. Still, the CWA is part of the baseline scenario, and compliance is assumed for the purpose of considering the impacts of the 4(d).

Section 303(d)(1) (C) and (D) of the CWA requires states to prepare Total Maximum Daily Loads (TMDLs) for all water bodies that do not meet state water quality standards. If a state fails in this responsibility, EPA is required to do so. TMDLs are a method for quantitative assessment of environmental problems in a watershed and identifying pollution reductions needed to protect drinking water, aquatic life, recreation, and other use of rivers, lakes, and streams. TMDLs may address all pollution sources including point sources such as sewage or industrial plant discharges, and non-point discharges such as runoff from roads, farm fields, and forests. State agencies in Oregon are committed to completing TMDLs for coastal drainages within 4 years and all impaired waters within 10 years. Similarly ambitious schedules are in place or in development for Washington.

The ability of these TMDLs to protect salmonids should be significant in the long term. However, it will be difficult to develop them quickly in the short term and their efficacy in protecting salmonid habitat will be unknown for years to come.

7. EQIP, CRP, WRP, and WHIP

Impacts on entities may be mitigated somewhat by four USDA Natural Resource Conservation Service programs. The Wetlands Reserve Program (WRP), Conservation Reserve Program (CRP), Environmental Quality Incentives Program (EQIP), and Wildlife Habitat Incentives Program (WHIP) all target landowners who bear costs when improving their land for an environmental objective. These programs potentially share costs of moving to best management practices (BMP's), and provide rental monies for easements. Budgets for these programs are limited however, and it cannot be assumed they are guaranteed to be available to all landowners bearing costs.

State Conservation Measures

Various conservation plans and protective measures relevant to the seven ESUs have been implemented at state and local levels. While several of the plans addressed show promise for ameliorating risks facing a variety of salmonids, some of the measures have not been implemented. Many of these measures are also geographically limited to individual river basins

or political subdivisions, thereby improving conditions for only a small portion of the entire ESU. To the extent possible, this analysis considers existing state and local protective measures as part of the baseline, and excludes their effects from the analysis. However, conservation plans and measures which are developed in response to the take guidelines of this 4(d) rule can be considered part of the effect of the 4(d) rule.

1. Oregon Conservation Measures

a. Forest Practices Act

The Oregon Forest Practices Act (FPA) was passed in the state legislature in 1971, and has undergone two major revisions in 1986 and in 1991. This act regulates forest operations on private and state lands, and sets standards for reforestation, stream protection, tree retention for wildlife habitat, and protection of scenic corridors. The Board of Forestry enforces the FPA, including through civil penalties. Although modified in 1995 and improved over the previous OFPA, the FPA's implementing rules do not yet adequately protect salmonid habitat. In particular, the current OFPA does not provide adequate protection for the production and introduction of LWD to medium, small and non-fish bearing streams. Small non-fish bearing streams are vitally important to the quality of downstream habitats. These streams carry water, sediment, nutrients, and LWD from upper portions of the watershed. Nonetheless, compliance with the FPA does provide many important protections for salmonid habitat.

b. Agricultural Water Quality Management Practices

Agricultural activity has had multiple and often severe impacts on salmonid habitat. These impacts include depletion of needed flows by irrigation withdrawals; blocking of fish passage by diversion or other structures; destruction of riparian vegetation and bank stability by grazing or cultivation practices; and channelization resulting in loss of side channel and wetland-related habitat (NMFS, 1996b). Historically, the impacts to fish habitat from agricultural practices have not been closely regulated.

The Oregon Department of Agriculture has recently completed guidance for development of agricultural water quality management plans (AWQMPs) (as enacted by State Senate Bill 1010). The guidance focuses on achieving state water quality standards. It is undetermined, however, whether they will adequately address salmonid habitat factors, such as properly functioning riparian conditions. Their ability to address all relevant factors will depend on the manner in which they are implemented. AWQMPs are anticipated to be developed at a basin scale and will include regulatory authority and enforcement provisions. The Healthy Streams Partnership schedules adoption of AWQMPs for all impaired waters by 2001.

c. Oregon Plan for Salmon and Watersheds

In April 1996, the Governor of Oregon completed and submitted to NMFS a comprehensive conservation plan directed specifically at coho salmon stocks on the Coast of Oregon. This plan, termed the Oregon Plan for Salmon and Watersheds (OPSW) (formerly known as the Oregon Coastal Salmon Restoration Initiative) was later expanded to include conservation measures for

other stocks (Oregon, 1998). Among other things, Oregon has committed to many measures that will contribute to improved water quality, water quantity and physical habitat for all salmonids.

d. Willamette Restoration Initiative (WRI)

Protecting and restoring fish and wildlife habitat and population levels in the Willamette River Basin, promoting proper floodplain management, and enhancing water quality is the focus of the recently formed Willamette Restoration Initiative (WRI). The WRI creates a mechanism through which residents of the basin are mounting a concerted, collaborative effort to restore watershed health. In addition, habitat protection and improved water quality in the Portland/Vancouver metropolitan areas are getting unprecedented attention from local jurisdictions. The regional government, Metro, recently adopted an aggressive stream and floodplain protection ordinance designed to protect functions and values of floodplains, and natural stream and adjacent vegetated corridors. All jurisdictions in the region must amend their land use plans and implementing ordinances to comply with the Metro ordinance within 18 months. Metro also has a green spaces acquisition program that addresses regional biodiversity, and is giving protection to significant amounts of land, some of it on tributaries to the Willamette River. The city of Portland has identified those activities which impact salmonids and is now using that information to reduce impacts of existing programs and to identify potential enhancement actions. The city will shortly be making significant improvements in its storm water management program, a key to reducing impacts on salmonid habitat.

e. Other Activities

Habitat protection and improved water quality in the Portland/Vancouver metropolitan areas are getting unprecedented attention from local jurisdictions. The regional government, Metro, recently adopted an aggressive stream and floodplain protection ordinance designed to protect functions and values of floodplains, and natural stream and adjacent vegetated corridors. All jurisdictions in the region must amend their land use plans and implementing ordinances to comply with the Metro ordinance within 18 months. Metro also has a green spaces acquisition program that addresses regional biodiversity, and is giving protection to significant amounts of land, some of it on the Sandy River or on tributaries to the Willamette River. The city of Portland has identified those activities which impact salmonids and is now using that information to reduce impacts of existing programs and to identify potential enhancement actions. The city will shortly be making significant improvements in its storm water management program, a key to reducing impacts on salmonid habitat.

2. Washington Conservation Measures

a. Lower Columbia Steelhead Conservation Initiative (LCSCI)

The State of Washington is currently in the process of developing a statewide strategy to protect and restore wild steelhead and other salmon and trout species. In May 1997 Governor Gary Locke and other state officials created a Joint Natural Resources Cabinet (Joint Cabinet) consisting of state agency directors from a wide variety of agencies whose activities and constituents influence Washington's natural resources. The goal of the Joint Cabinet is to restore healthy salmon, steelhead, and trout populations by improving those habitats on which the fish rely. The Joint

Cabinet's current activities include development of the LCSCI, intended to comprehensively address protection and recovery of salmonids in the Lower Columbia River area. In conjunction with the LCSCI process, industry in the Lower Columbia River Chinook ESU sponsored the review and assessment of existing conservation programs in this region (Cramer, 1997). This assessment provided a helpful summary of measures, which if fully implemented and funded, may aid in conserving salmonids in this region.

The LCSCI area includes all of Washington's stocks in the Lower Columbia River ESU. When completed, conservation and restoration efforts in the LCSCI area will form a comprehensive, coordinated, and timely protection and rebuilding framework. Benefits to salmonids in the LCSCI area will also accrue due to the growing bi-state partnership with Oregon.

b. Watershed Management Initiatives

The Legislature passed, and Governor Locke signed into law, the Watershed Management Act (ESHB 2514), which provides funding and a planning framework for locally based watershed management. Depending on how selected local governments and water utilities within a watershed decide to use the planning framework provided in ESHB 2514 (i.e., addressing water quality and habitat as well as water quantity), these watershed plans may have an important connection to specific salmon preservation and restoration activities and overall regional salmon recovery initiatives.

The Legislature also passed, and the Governor signed, the Salmon Recovery Planning Act (ESHB 2496), which provides funding and a procedural framework for prioritizing salmon restoration projects within specified areas agreed to by participating county, city, and tribal governments. These restoration efforts will be important components of watershed and regional salmon recovery initiatives.

c. Washington Forest Practice Rules

The Washington Department of Natural Resources implements and enforces the State of Washington's forest practice rules (WFPRs) which are promulgated through the Forest Practices Board. These WFPRs contain provisions that can be protective of salmonids if fully implemented. This is possible given that the WFPR's are based on adaptive management of forest lands through watershed analysis, development of site-specific land management prescriptions, and monitoring. Watershed Analysis prescriptions can exceed WFPR minimums for stream and riparian protection. However, NMFS believes the WFPRs, including watershed analysis, do not provide properly functioning riparian and instream habitats. Specifically, the base WFPRs do not adequately address large woody debris recruitment, tree retention to maintain stream bank integrity and channel networks within floodplains, and chronic and episodic inputs of coarse and fine sediment that maintain habitats that are properly functioning for all life stages of salmonids.

d. Agricultural Water Policy

Washington has not historically regulated impacts of agricultural activity on fish habitat overall, although there are some special requirements in the Puget Sound area, and Department of Ecology

is currently giving close attention to impacts from dairy operations. As in Oregon, development of Total Maximum Daily Loads (TMDLs; see earlier discussion) should improve water quality over the long term; the extent to which other habitat impacts will be ameliorated is unknown.

e. Wild Salmonid Policy

Washington has adopted a Wild Salmonid Policy, designed to limit hatchery influences on natural, indigenous salmonids.

f. Tribal Conservation Measures

A recovery planning group composed of the Makah and Quileute Indian Tribes, the National Parks Service, and Washington Department of Fisheries and Wildlife has recently initiated a collaborative planning effort to determine how to increase the abundance of naturally spawning Ozette Lake sockeye salmon to historic and self-sustaining population levels. NMFS and FWS will assist this effort, and other state agencies and interested parties will be invited to participate. The Makah Tribe, which has operated a supplementation program in Ozette Lake since the early 1980s, is contributing a draft supplementation plan as a starting point for the planning group.

While NMFS recognizes that many of the ongoing protective efforts are likely to promote the conservation of Ozette Lake sockeye salmon and other salmonids, some are very recent and few address conservation at a scale that is adequate to protect and conserve the Ozette Lake ESU. NMFS concludes that existing protective efforts are inadequate to preclude a listing for this ESU, and therefore the 4(d) rule will provide the additional regulatory requirements needed. However, NMFS will continue to encourage these and future protective efforts and will work with Federal, state, and tribal fisheries managers to evaluate, promote, and improve efforts to conserve sockeye and other salmon populations.

X. Reporting, Record Keeping, and Other Compliance Requirements

This rule does not require any reporting, record keeping or other specific actions by non-federal agencies, organizations, or private individuals. Rather it is the responsibility of individuals, agencies, and organizations not to "take" endangered or threatened species, once the take prohibitions are in place. NMFS provides guidance and technical support to help state and local agencies develop incentive, regulatory, or other programs that avoid or minimize take and effectively promote restoration of the listed population. Some programs for which NMFS has found it not necessary to prohibit take involve record keeping and/or reporting to support that continuing determination. NMFS has attempted to minimize any burden associated with programs for which the take prohibitions are not enacted.

XI. Federal Rules which Duplicate, Overlap, or Conflict with Proposed Rule

The NMFS is not aware of any rules which overlap, conflict or duplicate the proposed 4(d) rule governing "take" of salmonids.

XII. Alternatives to the Rule

NMFS has carefully considered whether any legally supportable options for a 4(d) rule might have less impact on small entities. That consideration was taken in the context of NMFS' statutory obligation to promulgate whatever protective regulations are necessary and advisable to provide for the conservation of the salmonid ESUs. The "take" prohibitions, which are the backbone of this rule, essentially constitute a performance standard; the rule does not include specific, prescriptive steps that must be taken by any particular entity.

For the seven threatened salmonid ESUs, NMFS proposes to apply the take prohibitions enumerated in section 9(a)(1) of the ESA. These prohibitions would apply to all categories of activities affecting threatened salmonids in those ESUs, except with respect to specified categories of activities that contribute to conserving listed salmonids or are governed by a program that limits impacts on listed salmonids to an extent that makes additional protection through federal regulation unnecessary.

In formulating this proposed rule, NMFS considered several alternative approaches. First, The U.S. Fish and Wildlife Service (USFWS) has a "global" protective regulation for threatened species, through which § 9 take prohibitions are applied automatically to all USFWS threatened species at the time of listing, unless the USFWS opts to provide a "special rule" for a particular threatened species. NMFS has no such global protective regulation, and hence must promulgate 4(d) regulations deemed necessary and advisable for each threatened species. NMFS has considered developing a similar global protective regulation that would apply to all future threatened species listings. Having global take prohibitions in place would make it difficult for NMFS to subsequently "tailor" the prohibitions on take to better fit circumstances, and could create unnecessary burdens on small entities when and if more tailored protections would suffice to conserve the species.

Second, NMFS could issue 4(d) protective regulations with no limits, or only a few limits, on the application of the take prohibitions for relatively uncontroversial activities such as fish rescue/salvage. For example, when NMFS listed Snake River spring/summer chinook and fall chinook (57 FR 14653, 1992) and Central California Coast coho (61 FR 56149, 1996) as threatened, it concurrently applied § 9 prohibitions to those ESUs, with two exceptions. These were for actions within a § 10 permit or other exceptions of the ESA related to endangered species, and to provide a six month window for continued research while researchers sought a § 10 permit. This approach, again, could mean unnecessary burdens on small entities, if more limited protections would suffice to conserve the species. It would not take advantage of the opportunity to streamline ESA compliance mechanisms for acceptable activities using the 4(d) mechanism.

Third, NMFS could enact take prohibitions in combination with detailed prescriptive requirements applicable to one or more sectors of activity. For instance, to protect threatened marine turtles, NMFS has required trawlers to be outfitted with turtle excluder devices meeting detailed design parameters. Although prescriptive requirements applicable to one or more

economic sectors may become necessary in the future for some or all of these ESUs, it is NMFS' judgment that at present tailored (by limiting application of the prohibitions wherever warranted) application of the take prohibitions will be adequate. The take prohibitions afford greater flexibility to entities to determine how they will avoid taking threatened salmonids, and therefore likely imposes fewer economic burdens than would a series of prescriptive requirements.

Fourth, NMFS could issue 4(d) protective regulations similar to the existing interim 4(d) protective regulations for Southern Oregon/Northern California coast coho published in July, 1997 (62 FR 38479). This regulation includes four additional limitations on the extension of the take prohibitions, for (1) harvest plans, (2) hatchery plans, (3) scientific research, and (4) habitat restoration projects, when in conformance with specified criteria. While this is a perfectly viable alternative, it would not give ESA recognition to several programs that provide sufficient protections for the listed salmonids such that Federal protections are not necessary. It would not take full advantage of the opportunity to streamline ESA compliance mechanisms for acceptable activities using the 4(d) mechanism.

Fifth, (the proposed rule approach) NMFS could issue a limited 4(d) protective regulation as in the interim rule, but with recognition of more programs and circumstances in which application of take prohibitions is not necessary and advisable. That is the approach taken in this proposed rule, which limits the take prohibitions for the seven items discussed above, but would also limit application of the take prohibitions for (1) properly screened water diversions; (2) in Oregon, for routine road maintenance by ODOT and possibly cities and counties; (3) for the integrated pest management of the Portland Parks and Recreation Department; (4) for urban density development activities, and (5) for forest management (including timber harvest) in Washington conducted in accordance with requirements of the State's Forests and Fish Report. For several of these categories (harvest, artificial propagation, habitat restoration, and urban development) the regulation is structured so that it allows plans or programs developed after promulgation of the rule to be submitted to NMFS for review under the criteria in the rule. Those programs which meet the proposed criteria would not be subject to the prohibitions on take. This approach would allow programs which are under development at the time of this rulemaking, or new programs within these categories, to be included later.

Sixth, NMFS considered an option earlier advocated by the State of Oregon and others, in which § 9 take prohibitions would not be applied to any activity addressed by the Oregon Plan for Salmon and Watersheds, fundamentally deferring protections to the state. At present, NMFS concludes that doing so would not provide sufficient protections to the listed salmonids. In this rule NMFS proposed not applying the take prohibitions to any sector of activity for which other mechanisms currently provide adequate protection for salmonids and their habitat. NMFS will continue to actively seek to identify any additional categories of activity that are managed or regulated in a way that conserves salmonids. NMFS will give equivalent recognition to other sectors or geographic areas through appropriate Endangered Species Act mechanisms whenever the facts warrant.

Finally, NMFS considered, but rejected, the alternative of enacting no protective regulations for threatened salmonids. That course would leave the ESUs without any protection other than provided by § 7 consultations for actions with some federal nexus. By virtue of the findings upon which the decision to list the ESUs as threatened, identifying broad segments of human activity as major factors in the decline of these salmonid ESUs, NMFS could not support that approach at this time as being consistent with the obligation to enact such protective regulations as are "necessary and advisable to provide for the conservation of" the listed salmonids.

NMFS concludes that at the present time there are no legally viable alternative rules that would have less impact on small entities and still fulfill the agency's obligations to protect listed salmonids.

XIII. Economic Mitigation and Sources of Aid to Small Businesses

In addition to the EQIP, CRP, WRP, and WHIP programs, discussed above, there are many other programs including privately funded programs that small business entities could take advantage of. A very good starting point for finding out about these programs can be found at the following web site: *http://www.4sos.org/*. This the web site for "For the Sake of Salmon" Organization which provides links that provide information on watersheds and advice on watershed restoration and improving water quality. Information on grants, funding sources and an extensive list of funding programs offered by Federal and state governments and private foundations. Links to specific agencies and organizations with funding sites on the web are provided including links to Federal, tribal, state, and local government organizations.

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